Abbas Acar

PhD Student
Cyber-Physical Systems Security Lab (CSL)
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Education

PhD
(2015-...)
- Department of Electrical and Computer Engineering, Florida International University, Miami, FL, USA
  Current GPA: **3.97**

MSc
(2015-2019)
- Department of Electrical and Computer Engineering, Florida International University, Miami, FL, USA
  Cumulative GPA: **3.97**

BSc
(2010-2015)
- *Major:* Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, Turkey
  Cumulative GPA: 3.00
- *Minor:* Department of Mathematics, Middle East Technical University, Ankara, Turkey

Research Interests

Security & Privacy
- Wearable-assisted Continuous Authentication Methods
- Security/Privacy of Internet of Things (IoT)
- Security/Privacy of Cyber-Physical Systems (CPS)
- Privacy-preserving methods
  - Fully Homomorphic Encryption (FHE)
  - Differential Privacy

Publications

- **Abbas Acar**, Long Lu, Engin Kirda, and A. Selcuk Uluagac, "An Analysis of Malware Trends in Enterprise Networks", The 22nd Information Security Conference (ISC), 2019.

- **Abbas Acar**, Wenyi Liu, Raheem Bayeh, Kemal Akkaya, and Arif Selcuk Uluagac, "A privacy-preserving multifactor authentication system" Wiley Security and Privacy, 2019.

- Z. Berkay Celik, **Abbas Acar**, Hidayet Aksu, Ryan Sheatsley, Patrick McDaniel, and A. Selcuk Uluagac, Curie: Policy-based Secure Data Exchange, ACM Conference on Data and Application Security and Privacy (CODASPY), 2019.

- **Abbas Acar**, Hidayet Aksu, A. Selcuk Uluagac, and Mauro Conti, "A survey on homomorphic encryption schemes: Theory and implementation," ACM Computing Surveys (CSUR), vol. 51, no. 4, p. 79, 2018.

- **Abbas Acar**, Hidayet Aksu, Kemal Akkaya, and A. Selcuk Uluagac. WACA: Wearable-Assisted Continuous Authentication. In 39th IEEE Symposium on Security and Privacy Workshop, 2018.

○ Amit Kumar Sikder, **Abbas Acar**, Hidayet Aksu, Selcuk Uluagac, Kemal Akkaya, and Mauro Conti. IoT-enabled smart lighting systems for smart cities. In 2018 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC) (IEEE CCWC 2018), Las Vegas, USA, January 2018.

○ **Abbas Acar**, Z. Berkay Celik, Hidayet Aksu, A. Selcuk Uluagac and Patrick McDaniel. "Achieving Secure and Differentially Private Computations in Multiparty Settings." IEEE Symposium on Privacy-Aware Computing (PAC). IEEE, 2017.

○ **Abbas Acar**, Hidayet Aksu, Kemal Akkaya, and A. Selcuk Uluagac. WACA: Wearable-Assisted Continuous Authentication Framework with Motion Sensors. In Proceedings of the 25th Usenix Security Symposium, 2016 (poster).

Invention Disclosures

○ **A. Acar**, H. Aksu, K. Akkaya, and S. A. Uluagac, "Method for continuous user authentication with wearables," Sep. 11 2018, US Patent App. 15/674,133.

Computer Skills

Languages	C/C++, Python, Verilog
Crypto Libs	NTL, HELib, SEAL
IDEs	Matlab, Android Studio/Wear, Xilinx ISE
Network Security Tools	WireShark, Smoothwall, Nmap, JtR, Aircrack, BackTrack, WMware, Oracle VM, OpenVPN, killerbee, ubertooth, GNURAdio, Scapy, HackRF One
Malware Analysis	IDA Pro, Dependency Walker, OllyDbg, PEiD, PeStudio, Procmon, Netcat, ApateDNS, Resource hacker
ML	Scikit-learn, Weka
Memory Forensics	Lime and Volatility
Productivity	Latex, MS Visio, Office
Modeling	Key Creator
Spice	Multisim, LTSpice
OSs	Linux, Windows

Professional Experiences

Visiting Researcher (May-Aug 2018)	○ Summer research visit to the group ic led by Prof. Engin Kirda at Northeastern University, MA, USA
(May-Aug 2017)	○ Summer research visit to the SPRITZ group led by Prof. Mauro Conti at University of Padua, Italy
Teaching Assistant	○ EEL6787 - Network Security ○ EEE4717 & EEE5718 - IoT-CPS-Sec-S17 ○ TCN4081 - Telecommunication Network Security ○ EEE4717 - Intro-IoT-CPS Security
Web Chair	○ Design and create the website of ACM Wisec 2019

Reviews ○ IEEE Transactions on Dependable and Secure Computing, Elsevier-Journal of Network and Computer Applications, IEEE Communications Surveys and Tutorials, IEEE Transactions on Information Forensics & Security, IEEE Conference on Communications and Network Security (CNS): International Workshop on Cyber-Physical Systems Security (CPS-Sec) 2016, IEEE International Smart Cities Conference (ISC2) 2016, IEEE Consumer Communications & Networking Conference (CCNC) 2017, Industrial Control Systems & Of Cyber-Physical Systems (CyberICPS) 2017, IEEE Conference on Local Computer Networks (LCN) 2017, IEEE Wireless Communications and Networking Conference 2018.

Class Projects and Coursework

Class Projects ○ Implementations:
- Implemented an Android Wear app to collect the sensor data of smartwatches.
- Improved and implemented our own malware in C.
- Designed a simulator for Slotted Aloha in C.

○ Research Papers:
- Training Classifiers Using Static Features to Detect Malwares on Android Platform.
- A survey of Differential Privacy
- Design and Analysis of A Communication Network Using Fiber Optics.

Relevant Coursework ○ <u>Graduate</u> Courses at FIU:
- CIS 5374 - Information Security and Privacy
- CNT 5415 - Practical Applied Security
- COT 5428 - Formal Foundations of Cyber Security
- EEL 5718 - Computer-Communication Network Engineering
- TCN 5080 - Secure Telecommunication Transmission
- CAP 5771 - Principles of Data Mining
- EEL 6787 - Network Security
- EEL 6805 - Advanced Malware Reverse Engineering

○ <u>Undergrad</u> Courses at METU:
- EE 444 - Introduction to Computer Networks
- EE 441 - Data Structures
- EE 435,436 - Telecommunication I,II
- EE 301,306 - Signals and Systems I,II

Languages

Turkish	**Native**	*Mother Tongue*
English	**Fluent**	*Daily practice, all work performed in English*

Social Interests

Hobbies ○ *Movies:* Sci-fi movies
○ *Sports:* Soccer, Basketball

Social Activities ○ Golden medal at a soccer competition organized at METU, Ankara, Turkey
○ Degree at the athletics competition organized among elementary students

References

Available upon request.